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ABSTRACT

Technology has the potential to make a significant impact on education at all learning levels, but it will be only as powerful as the degree to which it is integrated effectively into the total instructional program. Educators responsible for effective instruction must assume leadership in achieving this goal. This paper describes the background, objectives, and activities of a program in the Division of Instruction at the Maryland State Department of Education (MSDE) that is designed to develop and enhance this leadership at both the state and the local level. Program objectives are to: (1) enhance the Division of Instruction staff's ability to provide leadership for Maryland local education agencies in improving curriculum, instruction, and learning through effective integration of appropriate technology and related software; (2) provide state-level leadership and technical assistance to the Maryland Education Project--a cooperative effort to improve mathematics and science instruction through the use of technology, involving the MSDE Potomac Edison Power Company, six local school systems, and five institutions of higher education--in meeting the same goals; and (3) provide instructional effectiveness leadership for the initiatives outlined in the MSDE Strategic Plan for Educational Technology. (Author/GL)

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ENHANCING LEADERSHIP IN THE INTEGRATION OF TECHNOLOGY IN CURRICULUM AND INSTRUCTION

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Abstract

Technology has the potential to make a significant impact on education at all learning levels, but it will be only as powerful as the degree to which it is integrated effectively into the total instructional program. Educators responsible for effective instruction must assume leadership in achieving this goal. This paper describes a program in the Division of Instruction at the Maryland State Department of Education that is designed to develop and enhance this leadership at both the state and the local level.

Background

In 1986, the Division of Instruction of the Maryland State Department of Education began to explore the role of the Division in the area of technology in education. A Division Task Force, established for that purpose, concluded that technology has the potential to make a significant impact on education at all learning levels, but it will be only as powerful as the degree to which it is integrated effectively into the total instructional program. The Division of Instruction, as one of the agencies responsible for providing leadership for effective instruction, would need to provide leadership in helping integrate technology effectively.

This need was driven home when, in 1987, the Maryland State Department of Education became involved in the Maryland Education Project, a cooperative effort involving the Maryland State Department of Education, Potomac Edison Power Company, six local school systems, and five institutions of higher education in its service area. Potomac Edison provided a number of computer-networked labs in these public schools and colleges in their service area to support educational technology in the teaching of math and science. Each local school system was responsible for choosing and preparing the sites for the labs, and providing funds for software purchase and teacher training. The charge to the Division of Instruction was to coordinate efforts to bring a sound instructional base to the project.

Another call for leadership came from within the Department itself. The Maryland State Department of Education developed a Strategic Plan for Educational Technology; responsibility for a number of initiatives in this plan was given to the Division of Instruction.

The problem facing the Division of Instruction was that staff members themselves were at varying levels of knowledge and expertise in the area of technology; many were not prepared to assume leadership in an area with which they were either not familiar or comfortable. Therefore,

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in order to move to a leadership role in defining and guiding the integration of technology in his/her area, each specialist was asked to develop a personal plan related to technology. The plan would take many forms, depending on each specialist's level of knowledge and expertise; however, the goal was the same: to have each specialist become actively involved with technology at a number of levels:

Awareness Level: Specialists would increase their current awareness of the various types of learning technologies, related software, and their potential use for improving learning, curriculum, teaching, and assessment in specific content and focus areas;

User Level: Specialists would increase their use of current technology and related software in their own work and in promoting effective instruction in their area of expertise;

Leadership Level: Specialists would establish a leadership role by developing technology-based instructional material, providing feedback on technology-based material, conducting workshops or conferences to develop, demonstrate, and/or integrate technology-based instructional material.

The Division then established a program to support specialists in implementing their development plan as well as to help provide further support for the Division initiatives related to technology.

Program Objectives

The program, "Enhancing Leadership in the Integration of Technology into Curriculum and Instruction," has three major objectives:

A. To enhance the Division of Instruction staff's ability to provide leadership for Maryland local education agencies in improving curriculum, instruction, and learning through effective integration of appropriate technology and related software.

B. To provide state-level leadership and technical assistance to the Maryland Education Project in improving curriculum, instruction, and learning through effective integration of technology and related software.

C. To provide instructional effectiveness leadership for the initiatives outlined in the MSDE Strategic Plan for Educational Technology.

Program Activities

Division Staff

The Division has made a strong commitment to supporting this leadership initiative. First, through a block grant, they hired a support specialist to assist the Division in meeting the objectives of the program. The specialist and three other representatives of the staff became the Division Technology Team, which supports staff development in the Division and generally facilitates the technological initiatives.

Staff development is both formal and informal. As much as possible, the formal training on using computers and computer applications is done in small groups through State Department inservices; support agencies, such as Apple Computer; or one-on-one by other Division staff members. Much of the informal training consists of providing demonstrations on new learning technology and software, visitations around the state where technology is being used effectively to enhance learning, on-site assistance or coaching, and information-sharing.

The Division also has supplied equipment to help the staff become actively involved. They borrowed from the Maryland Education Project a network of computers that included the software programs that were being installed at school sites in the project; they then placed these computers on specialists' desks. Now the specialists are able to preview software and make recommendations to the project about their use in instruction. In addition, the Division purchased a Macintosh II and Laserwriter II printer for creating visuals used for presentations and for desktop publishing the numerous documents that come out of the Division.

Finally, two storerooms are being transformed into technology resource rooms that will house not only equipment and software, but also reference and research material on technology and instruction.

Maryland Education Project

This project was faced with the same problem as that of the Division. That is, the Project Coordinating Committee, composed of two assistant state superintendents from MSDE, an assistant superintendent from each LEA, and a full-time educational programs administrator from Potomac Edison, recognized the need for instructional people, i.e. content supervisors, principals, teachers, to become actively involved in the project if the technology was to become an effective part of instruction. They decided to form the Instructional Design Team. Each Assistant Superintendent chose five people to serve on the Team; these were a mix of content supervisors, principals, resource teachers, and computer coordinators. The mission of this Team was to construct a plan for effectively integrating technology into instruction.

At a working conference sponsored by the Maryland State Department of Education in May 1988 in Potomac Edison's Center for Instructional Research and Development located in their general office building in Hagerstown, these educators came together to answer three major questions:

What are the needs of the Maryland Education Project in order to make the technology an integral part of the instructional program?

How can the Instructional Design Team help meet these needs?

How can the Team be structured to accomplish these goals?

From these group reports came an operating structure for the project that facilitates operations and meets many of the needs of the project. The role of the Team is to advise the Project Coordinating Committee on instructional issues and needs, develop strategies and materials for the effective integration of learning technology, and disseminate information on the use of technology for learning improvement. To accomplish these objectives, the Instructional Design Team is structured around an Executive Committee, which coordinates the efforts of the Team, and six action teams. Each action team has a particular area of focus, based on needs expressed at the working conference: teacher training, instructional implementation, hardware, software, evaluation/research, and public relations. The Project Coordinating Committee agreed to four meeting dates for the Team for the 1988 - 1989 school year. At the first meeting in October, each action team developed an action plan to meet the needs of the project in that area. For example, the Software Action Team set as its goal the creation of an on-line data base of evaluated software programs that are correlated to various learning outcomes. They then listed what they would have to do to accomplish this goal within a certain time frame and the resources that they would need. The action plans will be presented to the Project Coordinating Committee at their next meeting. If approved, the rest of the year will be spent implementing these plans.

Summary

In both of these initiatives, within the Division and in the Maryland Education Project, educators responsible for effective instruction, especially in content areas, are becoming actively involved, not only with the technology itself, but in the problem-solving process of how to make it work in the classroom. This is the type of leadership needed if new learning technologies such as computers are going to change in a positive and productive way the teaching/learning dynamic.